

# Abnormal Eating and Dissociative Experiences: A Further Study of College Women

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*A total of 241 female college students completed the Eating Disorder Inventory (EDI) and a battery of other scales measuring tendencies toward psychopathology. Both abnormal eating and ego dysfunction were most strongly associated with depression; lower correlations were obtained with dissociation, fears, obsessions and compulsions, perceptual aberration, and magical ideation. Panic disorder was associated with abnormal eating but not ego dysfunction. There appears to be no specific association between eating disorder and dissociation. © 1995 by John Wiley & Sons, Inc.*

Although eating disorders have been linked with dissociative disorders since at least the beginning of this century (Janet, 1907; Torem, 1986), the evidence supporting this connection has been rather indirect (for a review, see Valdiserri & Kihlstrom, 1995). Perhaps the best evidence comes from studies showing that eating-disordered women score high on scales measuring dissociative symptomatology (e.g., Covino, Jimerson, Walton, Franko, & Frankel, 1994; Goldner, Cockhill, Bakan, & Birmingham, 1991; Demitrack, Putnam, Brewerton, Brandt, & Gold, 1990; Sanders, 1986).

Similar trends were revealed in a study of male and female college students by Valdiserri and Kihlstrom (1995). For the sample as a whole, and for the women as a group, there were significant correlations (averaging  $r = .18$  and  $.23$ , respectively) between scores on a modified version of the Dissociative Experiences Scale (M-DES; Bernstein & Putnam, 1986; see also Kihlstrom, Glisky, & Angiulo, 1994) and each subscale of the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983; Garner, 1991); the average correlation for men was  $.12$ . However, closer analysis revealed that dissociative experiences were more closely related to a measure of Ego Dysfunction derived from the EDI than to Abnormal Eating per se.

Valdiserri and Kihlstrom (1995) also noted another problem with the ostensible connection between abnormal eating and dissociation: There is very little evidence for the

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specificity of this relationship. It is possible that abnormal eating is correlated with forms of psychopathology other than dissociation, but that this connection has been missed because these other constructs have not been examined. The purpose of the present study was to replicate the findings by Valdiserri and Kihlstrom (1995) concerning the relations among abnormal eating, ego dysfunction, and dissociation; and to extend their findings by seeking evidence for the specificity of these associations.

## METHOD

### Subjects

A total of 241 university women were recruited for a study of attitudes and habits toward eating. In return for their participation, these subjects received credit toward the research participation component of their introductory psychology course.

### Procedure

Each subject completed a packet of questionnaires containing the EDI and M-DES (for fuller descriptions of these scales, see Valdiserri & Kihlstrom, 1995), along with additional measures related to other forms of psychopathology: The Beck Depression Inventory (BDI; Beck, 1967); the revised Fear Survey Schedule (FSS; Geer, 1965); Maudsley Obsessive-Compulsive Inventory (MOC; Rachman & Hodgson, 1980); a modified version of the Panic Attack Questionnaire (M-PAQ; Norton, Dorward, & Cox, 1986; Norton, Harrison, Hauch, & Rhodes, 1985); Perceptual Aberration Scale (PAS; Chapman, Chapman, & Raulin, 1978); and Magical Ideation Scale (MIS; Ekblad & Chapman, 1983). Subjects completed the questionnaires individually or in small groups; order of administration of questionnaires was randomized across subjects.

According to the standard procedure, the EDI was scored for eight subscales: Drive for Thinness (DT), Interoceptive Awareness (IA), Bulimia (BU), Body Dissatisfaction (BD), Ineffectance (IE), Maturity Fears (MF), Perfectionism (PE), and Interpersonal Trust (IT). In addition, two superordinate EDI scales were created from unit weightings of EDI subscales, following the procedure of Valdiserri and Kihlstrom (1994): Abnormal Eating was the sum of the DT, BU and BD subscales; Ego Dysfunction was the sum of the IA, IE, PE, MF and IT subscales.

The remaining scales were also scored according to their standardized procedures. The exception was the M-PAQ, for which no standard scoring procedure has been published. In this case, a composite score was achieved by summing subjects' responses to four critical items (1, 9, 10, and 11) with the average ratings given to the most recent and most severe panic attacks. Following the suggestions of Chapman and Chapman (1985), the PAS and MIS scales were combined to yield an overall measure of psychosis-proneness (PSY).

## RESULTS

In general, the mean scores on the eight subscales of the EDI, and on the M-DES, were comparable to those of large samples of college women reported elsewhere. All the

measures employed in this analysis proved to be highly reliable, with Carmine's theta exceeding .85.

Table 1 shows the correlations between EDI subscales and superordinate scale scores, and the M-DES and other measures of psychopathology. As expected, the frequency of dissociative experiences was significantly ( $p < .05$ ) correlated with four of the eight subscales of the EDI (DT, IA, BU, and IE, but not BD, MF, PE, or IT). Whereas the previous study found that M-DES scores correlated more highly with Ego Dysfunction than with Abnormal Eating, the present study found no difference between these superordinate scales. However, the remainder of Table 1 indicates that, compared to M-DES, the BDI correlated even more strongly with EDI subscales, whereas other scales—FSS, MOC, PAS, MIS, and PSY—showed correlations essentially equivalent to those obtained with M-DES. All these scales yielded essentially equivalent correlations with Abnormal Eating and Ego Dysfunction. The only scale to show a differential relationship with these superordinate EDI scales was M-PAQ, which correlated significantly with Abnormal Eating but not Ego Dysfunction.

An exploratory factor analysis (varimax rotation) performed on the individual scales employed in this study yielded two factors accounting for 52% of the variance. The MIS, PAS, M-DES, and MOC scales had substantial loadings ( $>.40$ ) on Factor 1, identified as Major Psychopathology; the remaining scales (BDI, FSS, and M-PAQ, including the two EDI superordinate scales Abnormal Eating and Ego Dysfunction) had substantial loadings on Factor 2, which was identified as Dysphoria. An oblique rotation (direct oblimin method) indicated that the correlation between these two factors was  $r = .28$ . The important finding of this analysis was that measures of abnormal eating and ego dysfunction loaded on a different factor than did dissociative experiences, and these factors were not highly correlated with each other.

Another perspective on this study is afforded by classifying subjects in terms of Abnormal Eating and Ego Dysfunction, and examining their scores on the remaining scales. For this purpose, the distributions of these variables were divided at the 90th percentile. A  $2 \times 2$  factorial analysis of variance (ANOVA) with two between-groups factors (Abnormal Eating and Ego Dysfunction) was then applied to the M-DES, BDI,

Table 1. Correlations between EDI subscales and measures of psychopathology

EDI Subscale	Psychopathology Scales							
	M-DES	BDI	FSS	MOC	M-PAQ	PAS	MIS	PSY
DT	.25	.46	.32	.23	.22	.24	.24	.27
IA	.25	.48	.21	.14	.19	.30	.23	.29
BU	.29	.42	.15	.11	.09	.40	.24	.34
BD	.09	.34	.22	.13	.16	.11	.11	.12
IE	.15	.44	.16	.17	.10	.19	.16	.19
MF	.11	.19	.08	.06	-.02	.06	.07	.07
PE	.12	.25	.12	.28	-.07	.05	.15	.12
IT	.02	.22	.15	.10	.02	.01	.05	.04
Abnormal Eating	.19	.45	.29	.19	.20	.21	.19	.22
Ego Dysfunction	.21	.51	.23	.25	.06	.20	.22	.23

Note. Decimals omitted. Correlations of  $r = .13$  are significant at the  $p < .05$  level. EDI = Eating Disorder Inventory; M-DES = modified version of the Dissociative Experiences Scale; BDI = Beck Depression Inventory; FSS = Fear Survey Schedule; MOC = Maudsley Obsessive-Compulsive Inventory; M-PAQ = modified version of the Panic Attack Questionnaire; PAS = Perceptual Aberration Scale; MIS = Magical Ideation Scale; PSY = Psychosis Proneness; DT = Drive for Thinness; IA = Interoceptive Awareness; BU = Bulimia; BD = Body Dissatisfaction; IE = Ineffectance; MF = Maturity Fears; PE = Perfectionism; IT = Interpersonal Trust.

FSS, MOC, M-PAQ, PAS, MIS, and PSY variables. Table 2 shows the corresponding cell means (the standard deviations have been omitted for economy of presentation). Although subjects with high levels of both Abnormal Eating and Ego Dysfunction also had high average scores on the M-DES, neither the main effect of Abnormal Eating,  $F(1,237) = 2.09$ , nor of Ego Dysfunction,  $F(1,237) = 2.00$ , reached conventional levels of statistical significance (both  $p > .10$ ); nor did the two-way interaction,  $F < 1$ . This negative outcome is not an artifact of low power, however, because significant effects did emerge for several of the other scales:

1. BDI: Effect of Abnormal Eating,  $F = 19.49$ ,  $p < .0001$ ; effect of Ego Dysfunction,  $F = 20.56$ ,  $p < .0001$ ; interaction,  $F < 1$ .
2. FSS: Abnormal Eating,  $F = 5.56$ ,  $p < .05$ ; Ego Dysfunction,  $F < 1$ ; interaction,  $F = 2.57$ , n.s.
3. MOC: Abnormal Eating,  $F < 1$ ; Ego Dysfunction,  $F < 1$ ; interaction  $F < 1$ .
4. M-PAQ: Abnormal Eating,  $F = 13.07$ ,  $p < .0001$ ; Ego Dysfunction,  $F < 1$ ; interaction,  $F < 1$ ;
5. PAS: Abnormal Eating,  $F = 15.88$ ,  $p < .0005$ ; Ego Dysfunction,  $F = 5.03$ ,  $p < .05$ ; interaction,  $F = 3.69$ , n.s.
6. MIS: Abnormal Eating,  $F = 1.26$ , n.s.; Ego Dysfunction,  $F = 4.54$ ,  $p < .05$ ; interaction,  $F < 1$ .
7. PSY: Abnormal Eating,  $F = 6.88$ ,  $p < .01$ ; Ego Dysfunction,  $F = 5.74$ ,  $p < .05$ ; interaction,  $F = 1.87$ , n.s.

In a final analysis, the seven psychopathology scales (i.e., excluding PSY, which is derived from PAS and MIS) were entered into separate multiple-regression equations predicting Abnormal Eating and Ego Dysfunction scores. For Abnormal Eating, regression analysis yielded a multiple  $R = .49$ ; for Ego Dysfunction,  $R = .52$ . However, comparison of the regression coefficients (see Table 3) indicated that most of this prediction was carried by BDI, with M-DES playing a very minor role. In a follow-up hierarchical regression analysis, the BDI, FSS, MOC, PAQ, PAS, and MIS scores were entered as a group, followed by M-DES. For both Abnormal Eating and Ego Dysfunction, addition of M-DES had no effect on the magnitude of  $R$ .

Table 2. Psychopathology scores for subjects classified by Eating Disorder Inventory (EDI) Abnormal Eating (AbnEat) and Ego Dysfunction (EgoDys) scales

Scale	EDI Category			
	Low AbnEat		High AbnEat	
	Low EgoDys	High EgoDys	Low EgoDys	High EgoDys
N	200	17	16	8
M-DES	11.51	16.23	16.31	19.34
BDI	6.89	12.23	12.07	19.88
FSS	123.49	141.18	172.50	150.50
MOC	7.08	9.35	8.56	8.63
M-PAQ	0.18	2.03	7.78	7.00
PAS	2.77	3.12	5.00	9.50
MIS	7.06	9.00	7.63	11.50
PSY	9.83	12.12	12.63	21.00

Note. See Table 1 for explanation of abbreviations.

Table 3. Psychopathology scales predicint Eating Disorder Inventory (EDI) Abnormal Eating and Ego Dysfunction scores

Scale	Regression Coefficients	
	Eating Disorder	Ego Dysfunction
M-DES	.04	.04
BDI	.59	.51
FSS	.01	.01
MOC	-.08	.07
M-PAQ	.17	-.03
PAS	.20	.01
MIS	-.11	-.02

Note. See Table 1 for explanation of abbreviations.

## DISCUSSION

The present study confirmed the finding by Valdiserri and Kihlstrom (1995) of a modest relationship between abnormal eating and dissociative experiences. Among undergraduate women, the frequency of dissociative experiences correlated significantly with aggregate measures of both abnormal eating and ego dysfunction, an attribute of personality hypothetically associated with eating disorder (Garner, Olmsted, Polivy, & Garfinkel, 1984; Vitousek & Manke, 1994; Williams, Schaefer, Shisslak, Gronwaldt, & Comerici, 1986). However, the correlations between eating disorder and dissociation were relatively weak compared to measures of other personality attributes related to psychopathology, particularly depression. Overall, eating disorder tendencies were more closely related to aspects of depression and anxiety than they were to dissociation. Within the population of normal college-age women, which includes some individuals who are frankly eating disordered and others who are at risk for eating disorder, there appears to be no particular relationship between abnormal eating and dissociative experiences.

Two associations between eating disorder and psychopathology stand out in the present study. First is the strength of association between eating disorder and depression. Those individuals with extremely high scores on both abnormal eating and ego dysfunction appear to be greatly at risk for depression—if they are not already clinically depressed. Second is the specific association between abnormal eating and panic disorder. The PAQ was the only questionnaire to yield a specific correlation with abnormal eating: All the other instruments produced correlations with ego dysfunction that were essentially equivalent to those obtained with abnormal eating. By contrast, individuals with extremely high scores on abnormal eating appear particularly prone to panic attacks. Discovering precise temporal association between panic attacks and bouts of abnormal eating is a matter of future research.

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